

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous listings and versions of claims in this application.

1. (Currently Amended) An electric motor linear speed controller, comprising:
 - a digital to analog converter means for converting an 8-bit digital signal to an analog voltage for setting voltage across a motor;
 - a digital state machine means comprising digital logic means and a state machine for converting the duty cycle of an input signal for output to the digital to analog converter means, wherein the digital logic means converts the input signal to a digital signal that identifies the duty cycle for input to the state machine; and
 - a closed loop feedback means for monitoring and setting the voltage across the motor.
2. (Original) The controller according to claim 1, further comprising an over-current sense circuit for monitoring the current across the electric motor.
3. (Original) The controller according to claim 1, further comprising an over/under voltage sense circuit for monitoring a supply voltage to the electric controller.
4. (Currently Amended) A circuit arrangement in a variable speed electric motor controller, comprising:
 - a controller logic circuit for operating a controller logic finite state machine to convert an input signal to a digital signal to identify a duty cycle for input to the state machine, wherein the state machine sets the voltage supplied to an electric motor; and
 - a closed loop feedback circuit for generating a signal indicating the voltage across the electric motor, the signal being for comparison to the voltage set by the state machine.
5. (Original) The circuit arrangement of claim 4, wherein the state machine comprises at least a running state.

6. (Original) The circuit arrangement of claim 5, further comprising one or more of the following set of states: a sleep state, a lockout state, an overcurrent state, a timeout state, or a battery check state.

7. (Original) The circuit arrangement of claim 4, wherein the controller logic circuit comprises a microprocessor and a memory, each configured for collectively controlling the state machine.

8. (Original) The circuit arrangement of claim 4, additionally comprising a digital to analog converter for converting an 8-bit digital signal to an analog voltage for setting the voltage supplied to the electric motor.

9. (Original) The circuit arrangement of claim 4, wherein the circuit arrangement is directly coupled with the electric motor.

10. (Previously Presented) A system for controlling an electric automotive component comprising a component and the electric motor linear speed controller of claim 1.

11. (Original) The system according to claim 10, wherein the component is an electric motor.

12. (Original) The system according to claim 10, wherein the component is an electric light.

13. (Original) The system according to claim 10, further comprising an over-current sense circuit for monitoring the current across the electric motor.

14. (Original) The system according to claim 10, further comprising an over/under voltage sense circuit for monitoring a supply voltage to the electric controller.

15. (Canceled).

16. (Currently Amended) An automobile comprising the circuit arrangement of claim 4
~~system of claim 15~~.

17. (Currently Amended) The automobile of claim 16, wherein the circuit arrangement
~~system~~ comprises a temperature-control system.

18. (Currently Amended) A linear speed controller for an automotive electric motor,
comprising:

a digital state machine for converting the duty cycle of an input signal for setting the
voltage to be supplied to the motor, wherein the duty cycle is provided to the digital state machine
by digital circuitry that receives the input signal in pulse-width modulated form in accordance with
the duty cycle;

an over-current sense circuit, for monitoring the current across said electric motor;

an over/under voltage sense circuit, for monitoring a supply voltage to the electric
controller;

a digital to analog converter, for converting an 8-bit digital signal to analog voltage
for setting voltage across said electric motor; and

a closed loop feedback loop adapted and configured to monitor the voltage across
said motor and a generate a feedback signal for adjusting the voltage supplied to the motor.

19. (Canceled).

20. (Canceled).